Clinical Update

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Inflammatory Papillary Hyperplasia (IPH)

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Purpose

Understanding the etiology and treatment modalities for inflammatory papillary hyperplasia (IPH) is important in the fabrication of a removable prosthesis. Reproducing inflamed tissues during impression procedures compromises the final restoration and may perpetuate soft tissue inflammation.

Introduction

IPH (also known as papillomatosis, pseudoepitheliomatous hyperplasia or denture stomatitis) is frequently associated with maxillary complete dentures or removable partial dentures which have some element of palatal coverage. IPH is classified clinically into one of three types (1):

Type 1: Localized simple inflammation or pinpoint hyperemia.
Type 2: Generalized simple inflammation or diffuse erythema.
Type 3: Granular inflammation. Exophytic, red and nodular.

Simple inflammation left untreated may progress to type 2 and then type 3. Newton (1) found that IPH has a prevalence rate from 2.9%-10% while others show a prevalence rate of 20% for all denture wearers (2). The incidence is higher in males and those patients with palatal tori.

Clinical Features

IPH has commonly been described as having a cobblestone appearance. It is a painless, firm, pink or red nodular proliferation more commonly found on the hard palate with occasional extension onto the residual ridge. When the papillary lesions are reddened, secondary infection with Candida is common. IPH is not pre-malignant; it is an inflammatory process with a fungal component (3).

Differential Diagnosis

Papillary outgrowth in combination with a dental prosthesis focuses clinical diagnosis on papillary hyperplasia. Histologically, the epithelium manifests multiple dome-shaped papules with elongated rete ridges and pseudoepitheliomatous hyperplasia. The submucosa contains a diffuse chronic inflammatory cell infiltrate (4). If the lesion extends onto the maxillary alveolar ridge, it must be differentiated from granulomatous infections or from verrucous carcinoma.

Granulomatous infections involving fungal organisms such as blastomycosis and histoplasmosis may be localized and exhibit a granular or papillary surface. The lesions are raised and firm and may appear erythematous. Microscopically, it can be diagnosed by the presence of multinucleated giant cells and epithelioid histiocytes (5). Verrucous carcinoma may clinically resemble papillary hyperplasia but it is a non-metastizing, superficially spreading epithelial tumor (6). It is refractory to standard IPH treatments.

Etiology

The etiology of IPH is unknown, but has been found co-existing with the following entities:

1. Excessive palatal relief. IPH is commonly perpetuated when the lesion has been reproduced in the final impression (7). If left untreated, it may become blanched against the denture base. The patient may complain of pressure or burning sensation. An attempt to treat this condition by relieving the base areas associated with the discomfort creates a void that allows for continued growth of IPH.

2. Malocclusion/Traumatic occlusion. Papillary hyperplasia is frequently seen with patients that have natural lower anterior teeth and a maxillary denture. In this situation the anterior teeth strike the upper denture before the posterior teeth occlude. The rotation of the maxillary denture may create a palatal void into which IPH develops (8). Similarly, traumatic occlusion originating from a worn prosthetic dentition or mismatched dentures can lead to poor denture base adaptation, tissue irritation and inflammation.

3. Continuous denture wearing day and night. Many denture patients do not comply with post delivery instructions or regular recalls. They may have social concerns and do not remove their dentures at night due to the embarrassment of being edentulous (8). Absence of salivary flow and the presence of candidiasis create an environment that promotes an inflammatory response

Treatment modalities

Inflammatory papillary hyperplasia is clearly a lesion with a multifactored etiology and presentation. The treatment regimen has to be similarly multi-focal. Treating the tissues with topical medications and tissue conditioners is invaluable. The one component that is frequently forgotten is the denture. Treating the denture itself with nightly soaks or medicaments has been shown to decrease the growth of microflora. For a promising outcome it will take the cooperation of the patient as well as frequent recall visits prior to making final denture impressions.

Treating the dentures

1. Reline with tissue conditioner. Tissue-conditioning materials are temporary soft-liners that flow for an extended period of time to allow distorted tissues to rebound and assume their original form (7). The soft material has a soothing effect on irritated tissues, helping to cushion and distribute the occlusal forces more evenly. Active microorganisms have been found to penetrate the first one-millimeter of the internal denture surface suggesting that frequent adjustment and relining are appropriate. Prior to making

denture impressions, the material should be changed every 3 to 4 days for several weeks until the tissues have recovered. Continue the tissue conditioning process until the new prostheses are delivered. The occlusion must also be stabilized and frequent recalls should be provided to monitor tissue health.

2. Nystatin oral suspension. (100,000 unit/ml) Available in 120ml bottles. Dispense two bottles initially. Have the patient mix 1 –2 teaspoons into a small bowl of water and soak the denture nightly. Use this regimen with the new prosthesis for a minimum of four weeks.

3. Antifungal cream. 1% Clotrimazole cream, Nystatin cream, or Miconazole are available in 15-gram tubes. Prescribe two tubes with refills. Have the patient apply a thin layer to the tissue side of the denture four to five times a day. Upon delivery of the new prosthesis, direct the patient to continue this regimen for another 3-4 weeks (9).

Treating the tissues

1. Clotrimazole (Mycelex) Troches. (10mg) Dispense 70 (two-week supply) with refills. Instruct the patient to remove the dentures and dissolve one troche in the mouth like a lozenge 4 to 5 times a day. Do not chew (9). Continue treatment for 4 weeks following new denture insertion.

2. Removal of the dentures. Educate the patient! The nightly removal of the dentures is imperative to a successful outcome. Have the patient remove the dentures for a minimum of 48 hours prior to making impressions. The patient needs to plan for this and should make the necessary arrangements to allow for any inconvenience (7).

3. Tissue massage**.** During the tissue conditioning period the patient should chew a soft chewing gum when the dentures are removed. This massages the tissue and allows for tissue rebound.

Surgical intervention

Large lesions may be refractory to the conservative treatments suggested above. Surgical removal may then be indicated using either abrasion or electrocautery treatment.

1. Mucoabrasion. Using a coarsely fluted acrylic or bone bur in a rotating handpiece the superficial layer of the palatal mucosa, slightly beyond the depths of the papillary crypts, can be removed.

2. Electrosurgery. When electrosurgery is the treatment of choice, utilize a fully filtered, fully rectified current with high volume evacuation. The speed of the electrode moving through the tissue should be no less than 7 mm/ second to minimize lateral heat. This should be performed with a steady light sweep. The time between cutting strokes should be at least 8 seconds for a straight wire and 15 seconds for loop electrodes. Post treatment coverage of the surgical area with tincture of myrrh and benzoin will provide a soothing barrier for the patient once the local anesthesia has diminished (10).

Summary

The suggested treatment modalities have been clinically proven to control and treat papillary hyperplasia prior to making denture impressions (7). Patients who are prone to fungal infections should be educated, monitored regularly and treatment modalities repeated as necessary. When treating IPH one must be mindful to treat the prosthesis as well as the patient.

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